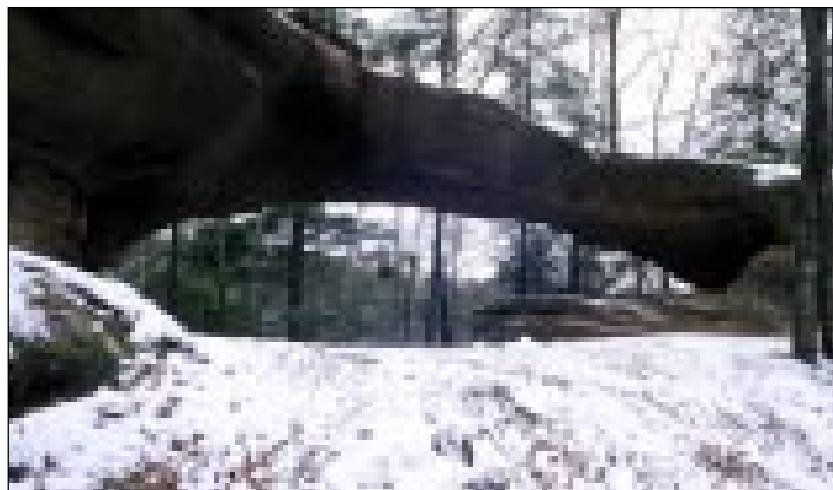

Land & Air & Water

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Winter 2001



Kentucky Natural Resources and Environmental Protection Cabinet

Land Air & Water

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Ozone levels improve in 2000

By Larry Garrison
Division for Air Quality

In 2000, ozone readings in Kentucky dropped to their lowest levels since 1993. Ozone is a colorless gas that can be found in the air we breathe. High levels of it may be harmful to children, the elderly and people with respiratory problems.

In 1999, monitors reported a total of 348 instances when an 8-hour average of ozone reached or exceeded a level of 85 parts per billion (ppb). An 8-hour average at this level exceeds the U.S. Environmental Protection Agency's (EPA) national ambient air quality standard for ozone. In 2000, monitors reported 77 instances when ozone levels reached this potentially unhealthful category. This is a 78 percent reduction from last year and is the lowest number of instances recorded in this category since 1993.

Increased rainfall and cooler temperatures in the summer of 2000 probably played an important role in reducing the number of days when ozone levels exceeded the EPA standard. In Kentucky, last year's drought conditions were ideal for ozone formation. Extended periods with no rain, high temperatures and low winds allow pollutant concentrations to build up, which may eventually result in high ozone levels. In comparison, frequent rains tend to cleanse the air of ozone-causing pollutants, and moderate temperatures slow down the photochemical reaction that is needed for ozone to form.

Vehicle emissions testing, carpooling and other ozone-reducing activities also help to limit ozone formation.

Ground level ozone is formed by a chemical reaction between volatile organic compounds (VOCs) and oxides of nitrogen (NOx) in the presence of sunlight. There are many sources of VOCs and NOx, including automobiles, power plants, aircraft and lawn equipment engines. These numerous sources of VOCs make ozone difficult to control. Although ozone levels have declined in many areas of the state, it continues to be a problem. Much of the decline can be attributed to reduced emissions from cars and industry. However, an increase in the number of vehicles on the highways and a growing industrial base tend to offset many of these reductions.

Land Air & Water Online

Visit *Land, Air & Water* magazine on the World Wide Web at
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(Top) Princess Arch at Daniel Boone National Forest. Photographed by Thomas G. Barnes, University of Kentucky.

(Left) Winter on Pine Mountain. Photograph provided by the Kentucky State Nature Preserves Commission.

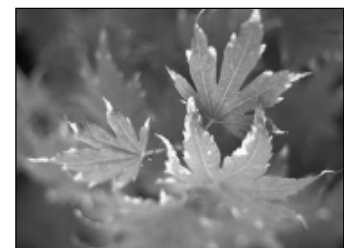
(Right) Ice crater at Bad Branch State Nature Preserve on Pine Mountain. Photograph also provided by the Kentucky State Nature Preserves Commission.



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Lawmakers may consider ideas for cleaning up Kentucky

The Kentucky General Assembly may soon be asked to consider solid waste legislation that aims to address the trashing of Kentucky's environment. Here's a look at the challenges we face to clean up the Commonwealth and increase our recycling rate.



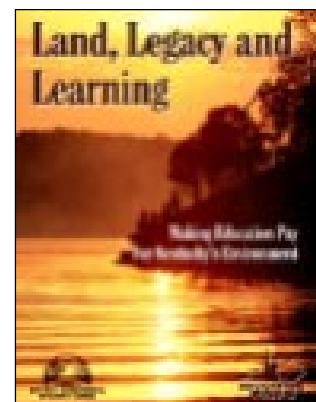
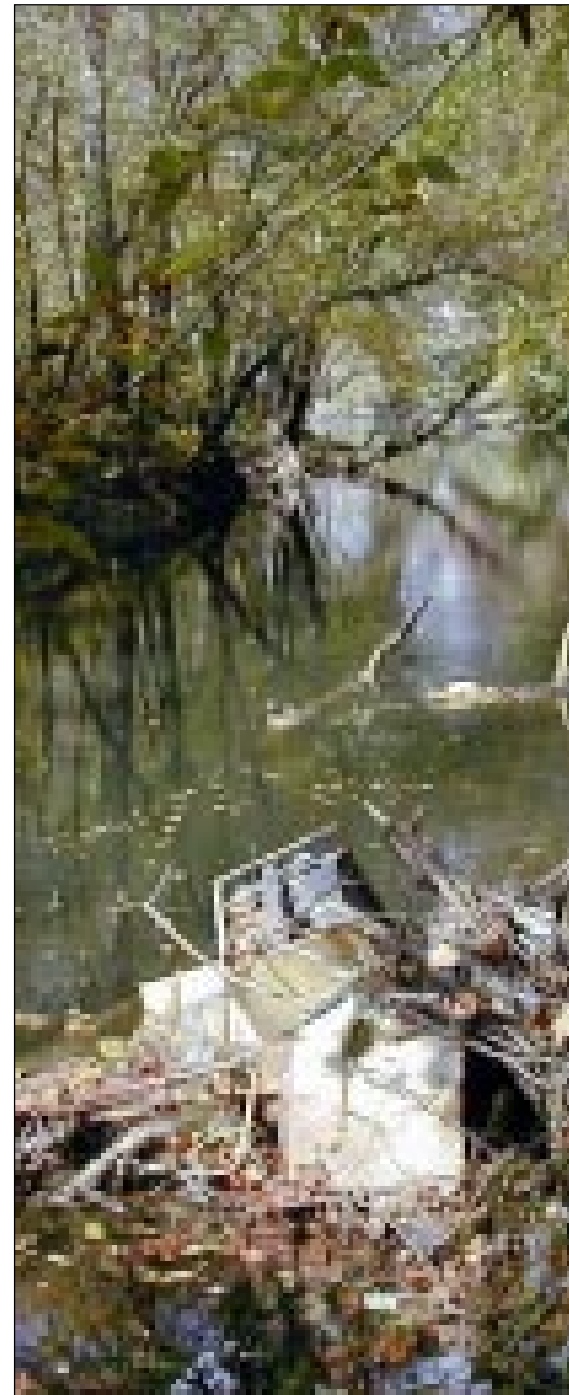
(Left) Morgan County officials cleaned up this dump on Coon Creek Road. Counties are responsible for cleaning up illegal dumps, but often lack the manpower and funding to do so.

(Right) Breathitt County, along middle fork of the Kentucky River.
Photos by Richard Thomas, Office of Secretary

An estimated 3,300 illegal dumps tarnish Kentucky's beautiful landscape, posing potential threats to human health and drinking water supplies. In 1999, counties spent more than \$6 million to eliminate dumps, but previously unknown dump sites are constantly being discovered. Since 1997, the Kentucky Natural Resources and Environmental Protection Cabinet (NREPC) has overseen the removal of 3,439 tons of trash by illegal dumpers.

The Kentucky Transportation Cabinet spends \$4 million a year to pick up trash tossed along the state's roadways. The Cabinet's Adopt-A-Highway program also organizes volunteers who clean up roadside litter. In addition, cities and counties spend millions of dollars on these cleanups. Despite these efforts, many motorists see nothing wrong with tossing candy wrappers, aluminum cans and bottles out of their vehicle's window.

(Right) An Adopt-A-Highway volunteer collects roadside litter in Somerset. Photo courtesy of the Kentucky Transportation Cabinet





The NREPC believes environmental education is a key component of all efforts to clean up Kentucky and increase recycling in the state. Informing people about proper waste disposal and changing improper attitudes will go a long way toward keeping Kentucky clean. The cabinet believes an environmental education master plan developed by a coalition of more than 150 educators, citizens, business leaders and others provides a solid foundation for this educational effort. The plan, "Land,

(Right) Automotive salvage yards like this one in Harlan County are required by the Kentucky Transportation Cabinet to have screening high enough to completely shield vehicles from view from any public road. Regulations also dictate that junk vehicles not be placed next to the roadway. Photo by Stan Anderson, London Regional Office



There are hundreds of automotive and machinery salvage yards in Kentucky, but only 100 of these operations are permitted, according to the Kentucky Transportation Cabinet. Many of the unpermitted sites fail to meet basic environmental performance standards. There are also an estimated 300,000 abandoned junk vehicles in the state.



(Left) Leaking drums at this Caldwell County salvage yard illustrate the problems of unpermitted sites. Photo by Stan Anderson



(Above) The City of Midway offers curbside recycling. Photo by William Hill, Division of Waste Management

Only 24 of Kentucky's 120 counties have mandatory garbage collection. In fact, 17 percent of the state's residents do not even have access to curbside pickup of their household waste. Many residents dispose of their waste illegally.

Curbside recycling is offered in only 35 of Kentucky's counties. Since 1999, nine counties eliminated their recycling drop-off boxes.

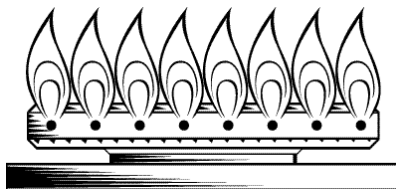
Legacy and Learning: Making Education Pay for Kentucky's Environment, was developed with the guidance of the Kentucky Environmental Education Council. It is available on the council's Web site at <http://www.state.ky.us/agencies/envred/KEECmaster.htm>. You can also obtain a copy by calling the council at (800) 882-5271. The NREPC hopes solid waste legislation passed by the Kentucky General Assembly will include a provision for environmental education.

For a closer look at illegal dumps,

recycling and other challenges outlined on these pages, you may wish to read "Cleaning Up Kentucky: Waste Problems and Challenges." This study was developed by the Kentucky NREPC and is available on our Web site at www.kyenvironment.org under the heading "Other Items of Interest."

Contact your state legislators to let them know what you think should be done to clean up Kentucky. When the Kentucky General Assembly is in session, you can reach your lawmakers at (502) 564-8100.

State agencies work together to address concerns over winter fuel price increases



By Greg Guess
Division of Energy

Sharply higher bills for winter heating fuels are going to put a crimp in the household budgets of many Kentuckians this winter. Prices for natural gas, heating oil and propane are projected to be up to 60 percent higher than last winter. The Kentucky Division of Energy has joined forces with state and federal agencies in hopes of reducing the impacts of these increases.

Although the division is not a regulatory agency, it is charged by statute with developing contingency plans for energy emergencies. Other partners in this effort include:

- Public Service Commission
- Office of Attorney General
- Department of Military Affairs, Division of Emergency Management
- Cabinet for Families and Children
- Transportation Cabinet, Division of Motor Vehicle Enforcement
- Department for Local Government

The cooperative efforts of these groups include exploring ways to lessen the impacts of price increases on low-income households and increasing awareness of potential problems at the local level. There have also been discussions about exempting fuel truck drivers from certain regulations during emergency periods. Public information officers from each of the agencies are also working together to develop public awareness campaigns about the price increases and conservation measures.

A variety of factors have led to this winter's price increases. The low natural gas prices of two years ago led to significantly reduced drilling. That decreased production plus an increased demand for gas-fired turbines for electricity generation have sparked an increase in natural gas prices. Those costs have risen from the \$2 per thousand cubic feet range two years ago to more than \$9 per thousand cubic feet in December 2000.

Oil, an international commodity, has been affected by last year's OPEC production cutbacks, a strong United States and world economy and uncertainty in the Middle East. A barrel of oil that was priced near \$10 two years ago is now in the \$30 price range, despite several OPEC production increases. Tightening supplies and price increases go hand in hand.

For tips to reduce your heating bills and other information, please see the Kentucky Division of Energy Web site at <http://www.kyenvironment.org/nrepc/dnr/energy/dnrdoe.html>

WHERE TO TURN FOR HELP

The following agencies can provide assistance on heating-related issues:

Kentucky Association for Community Action (KACA) (800) 456-3452

Administers the Low-Income Home Energy Assistance Program, which helps Kentucky families pay their utility bills each winter. KACA operates the program under a grant from the Kentucky Cabinet for Families and Children. The Community Action agencies have at least one staffed office in every county. <http://www.kaca.org>

Cabinet for Families and Children (800) 456-3452

Provides funding for the Low-Income Home Energy Assistance Program and the Weatherization Assistance Program operated by KACA. The Cabinet also operates a number of programs that provide assistance for low-income households, the elderly, children and other at-risk individuals.

<http://cfc.state.ky.us>

Public Service Commission (502) 564-3940

Provides oversight for regulated natural gas and electric service. Investigates price complaints involving regulated utilities. <http://www.psc.state.ky.us>

Office of the Attorney General (502) 696-5389

Investigates customer complaints and enforces consumer protection statutes.

<http://www.law.state.ky.us/cp/default.htm>

Office of Aging Services (502) 564-6930

Responsible for receiving, investigating and seeking resolution to problems encountered by nursing home residents, the elderly and their families.

<http://cfc-chs.chr.state.ky.us/chs/oas/aging.htm>

Department for Local Government (800) 346-5606

Assists in the coordination of energy issues with local governments and municipally owned utilities.

<http://www.kylocalgov.com>

Office of the State Fire Marshal (502) 564-3626

Provides advice on the safe use of auxiliary heating appliances. <http://www.state.ky.us/agencies/housing/divfire.htm>. Fire safety tips and Web links can be found at

<http://www.fireandsafety.eku.edu/>

Kentucky Division of Energy (800) 282-0868

Provides information on conservation and energy efficiency.

<http://www.kyenvironment.org/nrepc/dnr/energy/dnrdoe.html>

Division of Motor Vehicle Enforcement (502) 564-3276

Determines if exemptions to Federal Motor Carrier Safety Administration (FMCSA) regulations are appropriate and/or required. <http://www.kytc.state.ky.us/cabinet/contacts.htm>

First results from study on pollution in Tri-State area

By Aaron Keatley
Department for Environmental Protection

An environmental study has found increased cancer and other health risks for some residents of Kentucky, Ohio and West Virginia. A multi-agency group released these findings from the first phase of its study in the fall of 2000.

Complaints and concerns about air pollution from area residents to the U.S. Environmental Protection Agency prompted the formation of the Tri-State Geographic Initiative, one of the first studies of its kind in America. The three states and the three EPA regions in which each is located (Regions 3, 4 and 5) joined together to form the initiative. The goal of the project was to determine the presence and levels of pollution that could cause health problems for the area's residents. This involves looking at a variety of environmental issues, including air quality, drinking water quality and levels of pollutants in Ohio River fish.

The area under examination is the tri-state region where Kentucky, Ohio and West Virginia meet. It covers 2,300 square miles and includes Lawrence and Scioto counties in Ohio, Cabell and Wayne counties in West Virginia and Greenup and Boyd counties in Kentucky.

Because of the area's size, study partners divided it into six smaller areas called clusters, each identified by the presence of a concentration of large industries. They then prioritized the clusters and began work on the first one, named the Kenova Cluster (because of its proximity to Kenova, W.Va.) in 1996. This cluster also contains the community of Catlettsburg, Ky. Studies the initiative performed for this cluster included air pollution monitoring, air pollution modeling, a drinking water evaluation and a fish consumption study.

Air monitoring and air modeling

Scientists conducted air monitoring at seven locations in the Kenova Cluster. They collected and analyzed more than 900 samples from these stations. Researchers also placed a mobile lab at four other locations over a 15-week period,

collecting more than 1,500 additional samples. The year of monitoring revealed risk levels similar to those seen across the nation. There were elevated cancer risks in the Kenova Cluster from six chemicals and elevated noncancer health risks from three.

Air modeling involved using information from four industries in the cluster about their emissions—Marathon Ashland Petroleum LLC, Ashland Chemical, Aristech and Calgon Carbon Corp. Together with meteorological information about temperature, air currents, wind velocity and precipitation, a computer model predicted the levels of various pollutants that would occur at certain locations. Researchers selected locations that represent the most vulnerable populations, including hospitals, nursing homes, schools and daycare facilities.

Members of the initiative, including the Kentucky Department for Environmental Protection (KDEP), believe these risks are not acceptable. KDEP continues to implement a variety of programs that are reducing risks from air toxics. Air quality trends in the tri-state area have improved over the past decade, and these programs will continue to reduce air pollution risks in the Kenova Cluster.

Fish consumption

Risk estimates for consuming fish from the Ohio and Big Sandy rivers were based on information from the Ohio River Valley Sanitation Commission about different species of fish it had sampled. The highest cancer and other health risks stemmed from the discovery of PCBs in catfish, carp and smallmouth buffalo. PCBs represented a lower, long-term, noncancer health hazard in crappie, black bass and sauger. Methylmercury also posed hazards above the acceptable level in catfish, carp, smallmouth buffalo and sauger.

Residents in the tri-state area, as well as in other parts of Kentucky, should be aware of existing fish consumption advisories. The KDEP, together with the departments of Public Health and Fish and

Wildlife Resources, issued a fish consumption advisory for PCBs and chlordane for some fish species in the Ohio River in 1990. The advisory has been continued and altered over the years. Chlordane has been removed as a contaminant of concern because levels in the Kentucky portion of the river have decreased since the advisory was first issued. In April 2000, a statewide mercury advisory was issued for all freshwater fish from Kentucky waters, including the Ohio River.

In addition to fish consumption advisories, the KDEP will also continue long-term efforts to reduce water quality concerns.

Drinking water evaluation

The study found Kenova area drinking water facilities are providing water that is much safer than the law requires. They exceed national standards set to guard against risks from disinfection byproducts, which are contaminants produced when chlorine used to purify water breaks down over time. However, some byproducts produced by chlorination result in cancer risks of up to three in 100,000 in the area. The study partners point out that the health risks of drinking surface water that has not been disinfected are enormous.

Chlorination of water supplies was introduced in the United States in 1908, and the incidence of waterborne disease has dropped dramatically since then. Eighty percent of all disease worldwide is estimated to be due to improperly sanitized food and water.

What's next

With monitoring in the Kenova Cluster complete, scientists turned their attention to the Greenup Cluster, which consists of the cities of Greenup, Ky., and Wurtland, Ky., and an area of land in Ohio. Monitoring there is also complete, and risk assessment results from analyses of data are expected near the end of 2001.

The schedule of monitoring and assessments from the remaining four clusters has not yet been determined.

Toyota sets greener standards for itself and its suppliers

By Heather Frederick
Public Information and Education Branch

One of the country's biggest automakers plans to reduce its impact on Kentucky's environment. Toyota Motor Manufacturing North America has established new standards that will affect its plant in Georgetown, Ky., as well as its facilities around the country and in Canada. The Georgetown plant manufactures the Toyota Camry and Avalon sedans, along with the Sienna minivan.

Toyota's efforts to be more environmentally friendly focus on its own operations and on its suppliers.

In the fall, Toyota announced its new "Environmental Action Plan," which outlines goals it wants to reach at its North American plants by 2005. They include:

- Reducing the use of electricity, water and natural gas by 15 percent.
- Reducing the emissions of volatile organic compounds (VOCs) by 30 percent.
- Reducing hazardous waste disposal at landfills by 95 percent.

Each of Toyota's automobile and automotive part plants is developing its own plan on how to meet these goals.

Toyota knows the 95 percent reduction in hazardous waste disposal is an ambitious target. "I think it's a big issue," said Kevin Butt, the assistant general manager for environmental affairs in North America. "It reduces our long-term liability and forces us to look at the raw materials we're using currently and maybe make alternative choices so that any waste produced isn't hazardous."

In addition to the goals it established for itself, Toyota has also issued new requirements for its 500 automotive suppliers. Suppliers who provide parts, materials or components to Toyota will be required to comply with at least one of the following initiatives:

- Obtain ISO 14001 Certification.
- Comply with a chemical ban list.
- Develop appropriate policies to comply with applicable regulations on the transportation of hazardous materials.



Sparks are flying on the production line at Toyota Motor Manufacturing in Georgetown, Ky. Almost 100 robots perform various welds to the vehicles' main bodies on this line. Photo provide by Toyota

ISO 14001 is an international standard for environmental performance. It requires companies to set environmental objectives and demonstrate continual improvement in their operations. The reduction of volatile organic compounds emitted by paint shops in factories is an example of the type of improvement that might be addressed by an ISO 14001 objective. In order to obtain ISO certification from Toyota, suppliers will have to be evaluated by an independent auditor.

Toyota's chemical ban list for North America identifies about 450 chemicals and substances that suppliers of raw materials must phase out in new and reformulated materials. To compile its list of banned chemicals, Toyota looked at regulated lists of chemicals from all countries and chose those that were used in high volume. The long-term goal of the chemical list is for the company to

produce cars that can be dismantled or shredded at the end of their usable life without concerns about the chemicals the cars contain. Toyota will work with its suppliers to find replacements for chemical ingredients that are on the ban list and to establish a phase-out schedule for the replacement of those ingredients.

The final objective for suppliers is that they comply with all state, federal and international requirements on the transportation of hazardous materials. This objective focuses on the packaging, loading, handling and transportation of hazardous materials.

Not all of Toyota's suppliers are being asked to comply with all of its objectives. "We thought very carefully about all the suppliers we had," Butt said. "We felt it wasn't fair carte blanche to say 'You have to comply with these guidelines.'" For example, ISO certification would be very costly for the company's small suppliers. "We tried to break down carefully who had the highest impact and volume and ask them to participate with us so we wouldn't cause burden where it wasn't necessary. But if it was a small supplier who provides us with high toxicity chemicals, they would be asked to comply. The bottom line is where can we get the best environmental performance from our suppliers?"

Meeting its current environmental goals and getting its suppliers to do the same won't be the end of Toyota's efforts to become a stronger steward of the environment. The company will establish a set of new goals in a few years, even though environmental performance comes with a price tag. "It's expensive, but it's a part of doing business," Butt said. "We manufacture in neighborhoods where our team members live. It's our obligation to protect our team members and the neighborhoods where they live. Our philosophy is that everyone is accountable for environmental performance, from top to bottom. We want to improve our performance every year. We don't want to just be driven by regulations."

Watching *the* waters in 2000

Story contributors:

Bob Wise, Four Rivers Basin

Greg Epp, Kentucky River Basin

Pamla Wood, Licking River Basin

Pennie DuBarry, Salt River Basin

Rob Miller, Upper Cumberland River Basin

Dale Reynolds, Green/Tradewater River Basin

An important report hit the Web, a basin team hit the road and another river basin joined the rolls of a state watershed program in 2000. The Watershed Management Initiative helps bring together federal, state and local agencies, along with interested groups and individuals within each river basin, to work to protect the waterways of the area. The Green/Tradewater Basin joined the process in 2000. Here's a look at what it and others accomplished last year.

Green/Tradewater River Basin

A new river basin team coordinator, Dale Reynolds, will oversee watershed activities in the Green and Tradewater river basins. The team's first task is to develop its outreach message and to compile information to produce a basin status report. The report will join four others that provide a "snapshot" of conditions in each basin and lay the foundation for developing a coordinated monitoring strategy, planning and implementation.

Cumberland River Basin and Four Rivers Region

Robert Miller was appointed to oversee watershed management activities in the entire Cumberland and Four Rivers Region. His office is located in the Upper Cumberland Basin in London, but he also works closely with the Lower Cumberland/Four Rivers Region Basin Team.

Upper Cumberland River

Water quality problems have plagued Harlan County for quite awhile. An intensive monitoring effort by the Division of Water traced sources to illegal straight pipe discharges and failing septic systems.



Bayou De Chien in Hickman County. Division of Water photo

The replacement of some straight pipes and the addition of a new wastewater treatment plant in the city of Harlan have improved the situation, but more coordination and funding are necessary to solve this immense problem.

In 2000, funding from the Division of Water helped establish the Harlan County Environmental Task Force, a local citizen organization. The group has determined a need for a county-wide sanitation district to properly manage and implement funding for a comprehensive wastewater treatment infrastructure. The task force presented the idea to the Harlan County Fiscal Court in August, and an ordinance was drafted. At press time, the ordinance was under review by Harlan County Fiscal Court.

Four Rivers Region

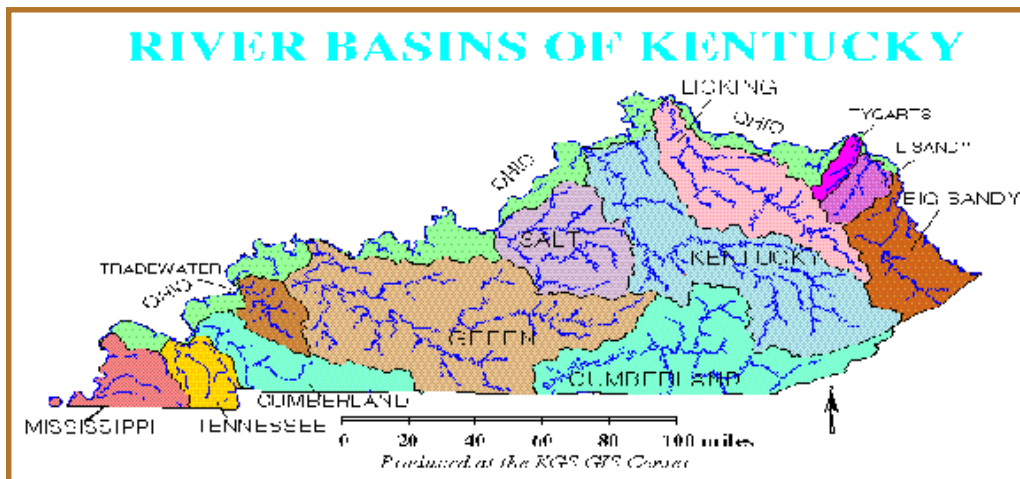
Based on information gathered for a basin status report, the Four Rivers Watershed Team decided to ask cooperating agencies to modify their monitoring plans to focus on fecal coliform and pesticides.

Because the Cumberland River runs from eastern Kentucky down into Tennessee and back up into western Kentucky as it flows north into the Ohio River, any problems that impact the Cumberland will affect both Kentucky and Tennessee. Therefore, the Four Rivers Basin Team is working closely with the Cumberland River Compact, its counterpart in that state, to coordinate efforts and information. As a result of this cooperation,

a team was recently formed to focus on the Red River, which flows from western Kentucky into Tennessee and then on into the Cumberland River.

Licking River Basin

The team in this basin is eagerly awaiting information from the 1999-2000 sampling due out this winter, so it can begin a deeper evaluation of the watershed. One of its challenges will be to characterize



Continued on Page 7

New grant project targets industry, environment and economy

By Karen Landry
Division of Energy

Almost half of all energy used in Kentucky is consumed by industry. That's why five Kentucky industries are the targets of a new program in the Kentucky Division of Energy.

Just as energy-efficient appliances can help households save money, energy-efficient production processes can help industries improve their financial performance, reduce pollution and cut down on the production of waste products.

The U.S. Department of Energy recently awarded the Kentucky Division of Energy a \$199,160 grant to initiate the *Industries of the Future* program in five Kentucky industries—agriculture, forest products, chemicals, mining and steel. This extends the scope of a similar grant the division received last year to develop the program with the aluminum industry. Combined, the five new industries employ 27 percent of Kentucky's manufacturing production workers and account for 28 percent of its manufacturing value added.

The purpose of *Industries of the Future* is to help industries work together to plan their future research and development strategies in ways that improve energy efficiency and reduce the generation of waste. The program fosters federal, state and industry partnerships to improve the energy efficiency, environmental profile and economic competitiveness of nine of the nation's most energy-intensive industries. Once an industry has jointly determined its research and development strategy, companies form consortia to pursue specific projects, which may be partly funded by the U.S. Department of Energy. The Kentucky aluminum industry has already begun work on two large research and development projects, with two more proposals in line for possible funding.

The Kentucky Division of Energy is working with several groups to implement the program. These groups include the Center for Aluminum Technology at the University of Kentucky, UK's Center for Robotics and Manufacturing Systems,

the Center for Business and Economic Research at UK and the Kentucky Pollution Prevention Center at the University of Louisville. These groups will assess the economic importance of each industry in Kentucky, establish networks of decision makers within each industry and help them develop their research and development strategies, known as "technology roadmaps."

Geoff Young, the Kentucky Division of Energy's contact person for the two industrial projects, is excited about the possibilities. "There is a very large potential to improve energy efficiency and reduce waste generation in these industries," he said, "and the total benefits for Kentucky's economy and environment could be significant."

Watching the waters in 2000

Continued from Page 6

activities that result in soil loss and sedimentation, which occurs throughout much of the basin.

Among other efforts in the region:

- Public and private forces are working in Bath County to provide wastewater treatment for a community situated far from a sewage treatment system.
- The Cooperative Extension Service has chosen the Licking River Basin as the pilot basin for its new Master Water Educator program. Once trained, these volunteers will spread the word on watershed management throughout the area.

Salt River Basin

The Salt River Basin Team "hit the road" to tell people in the area about watershed management activities. At a meeting at Bernheim Forest in August, a group from Bullitt County heard a presentation on the state's new forest conservation act and then visited Maple Gate Farm to see firsthand examples of both proper and improper logging practices. They also watched an in-stream demonstration on stream assessments and basic water quality testing.

Team member Pennie DuBarry represented the team at the Food, Farming and Our Environment Coalition's teacher-in-service program at the Blackacre State Nature Preserve in September, where she provided teachers with ideas on how to build a classroom curriculum focused on the Salt River Basin.

Kentucky River Basin

The 2000 Kentucky River Basin Assessment Report was published in August. It is available on the World Wide Web at <http://kywatersheds.org>. Scroll down to the "Kentucky River Basin" section of the page to see the report. The report includes a ranking of watersheds, grouping them into categories reflecting high, medium or low needs for protection or restoration. The rankings were compiled by weighing dozens of direct and indirect measures of watershed health, sensitivity and value. These rankings are the starting point for listing the top priorities in the basin.

Newly established watershed task forces in the Kentucky River Basin will use information from the assessment report and add local details to begin looking for ways to improve and protect water quality and watersheds as a whole. The task forces will serve to move watershed management activities in the basin from the information gathering and analysis stage of the past three years to local planning to carry the process forward.

Big and Little Sandy River Basins

The basin coordinator for these basins will be hired this winter, and team formation will begin in the spring of 2001.

Team practices dam safety

By Maleva Chamberlain
Division of Water

"Water bounded down the valley, crashing and roaring, carrying everything before it. For a mile its front seemed like a solid wall 20 feet high," said a witness after the Connemaugh Lake dam broke above Johnstown, Pa., on May 31, 1889. Heavy rainfall filled the lake and pressed against the neglected dam until it collapsed, leading to the deaths of 2,209 at Johnstown. A farmer who escaped said that the water did not come down like a wave, but jumped on his house and beat it to fragments in an instant. He was safe on the hillside, but his wife and two children were killed.

To prevent catastrophes like the one at Johnstown, the Dam Safety Section of the Division of Water keeps an inventory of dams in Kentucky and inspects them regularly. But just in case Kentucky experiences an unexpected dam failure, the section's emergency team prepares for the worst.

The group trains each year by setting up demonstrations for local emergency management and elected officials. The demonstrations show how equipment is used to lower lake levels in emergencies. In the fall of 2000, the dam safety team trained at the London Reservoir in Laurel County and at Camp Ernst Lake in Boone County.

The demonstrations serve two purposes, according to Art Clay, supervisor of the Dam Safety and Floodplain Compliance Section. "One is to test the equipment to make sure it's working correctly," Clay said. "And it's also a training exercise for local and regional offices because we call for their assistance in

actual emergencies."

When a dam is failing, the goal of the emergency team is to release the water behind it gently, but swiftly. Team members use large siphons and pumps and try to discharge the water into the dam's spillway whenever possible. One siphon is capable of moving water at a rate of 600 to 800 gallons per minute. A larger one can move up to 1,500 gallons per minute.

"We usually get two or three emergencies a year," says Marilyn Thomas, an engineer in the section. "The dams usually pick inconvenient times to fail. I've worked one or two emergencies in a blizzard."

The section maintains an inventory of dams that are at least 25 feet high or those which create a lake covering 50 or more acres. In addition, any dam constructed above something that could be damaged, such as a house, would be included on the list as a high-hazard impoundment. "We advise people building a dam to determine whether there is property downstream that could be developed and to keep in mind

that they are legally responsible for damages if their dam should fail," Clay said.

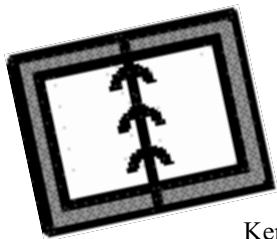


Division of Water personnel from the Florence Regional Office observe a de-watering demonstration at Camp Ernst Lake in Boone County. Photo by Art Clay

The information and quotation on the Johnstown flood is from "History of the Johnstown Flood" by Willis Fletcher Johnson, published in 1889 by Edgewood Publishing Company. This information was obtained from the following Web site: <http://prc.railfan.net/documents/JohnstownFlood.html>

Panel announces 2001 meeting schedule

By Rose Marie Wilmoth
Air Quality Representative



To learn more about efforts to protect Kentucky's air quality, attend meetings of the Air Quality Small Business Panel in 2001. Panel members represent small businesses, legislators, the general public, economic development programs and regulators. The panel advises the Natural Resources and Environmental Protection Cabinet on the effectiveness of the air quality compliance assistance offered for small

businesses by the Cabinet's Division for Air Quality. The panel also sponsors the annual Kentucky Small Business Air Quality Stewardship Awards.

Here's a look at its schedule of quarterly meetings:

- Jan. 29, 2001
- April 30, 2001
- July 30, 2001
- Oct. 29, 2001

Quarterly meetings will be held at the Division for Air Quality, 803 Schenkel Lane, Frankfort, Ky., at 1:30 p.m. The meeting facility is accessible to people

with disabilities. To request an interpreter or other auxiliary aid, contact Rose Marie Wilmoth at (800) 926-8111. Persons with hearing and speech impairments can contact Wilmoth calling the Kentucky Relay Service at (800) 648-6056. This service allows hearing or speech impaired persons who use a text telephone, VCO phone or computer to call a hearing person.

Agendas for the Air Quality Small Business Panel's meetings are available two weeks in advance by calling (800) 926-8111 or (502) 564-2150.

An estimated 250 million gallons of coal slurry escaped from an impoundment in Martin County, Ky., on Oct. 11, 2000. The mixture of coal and rock dust, rock, slate, clay and water filled two creeks with a substance that had the consistency of wet concrete. The slurry also entered several other waterways.

The spill forced public water systems in Kentucky and West Virginia to shut down, filled the yards of area homeowners and triggered a massive cleanup effort. The cause of the spill is still under investigation, but the Natural Resources and Environmental Protection Cabinet has cited Martin County Coal for numerous violations of state regulations. As of December 2000, the company was appealing these citations.



The slurry spill affected 14 homes in the Coldwater Fork area and five in the Wolf Creek area. Some residents could not access their homes due to road or bridge damage.

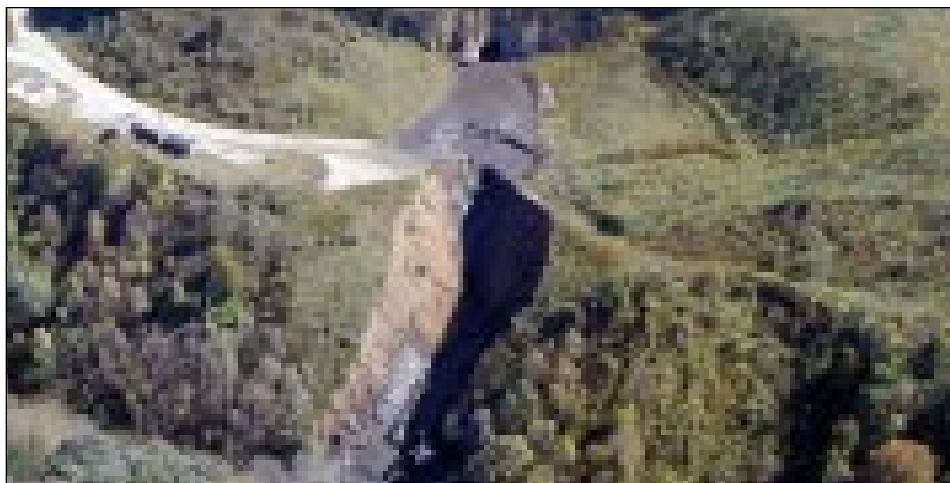
Slurry Spill in Martin County



(Above) Secretary Bickford (center) was joined by Ron Padgett (left) director of the Kentucky Division of Emergency Services and Major General Russ Groves (right) state Adjutant General in a planning meeting in Ashland. Ashland officials prepared a backup water supply plan in the event water intakes on the Ohio River had to be shut down due to the slurry spill. However, once the material entered the Ohio, it dissipated enough that it did not affect Ashland's water supply.

(Upper right) Slurry that escaped from the Martin County Coal impoundment traveled through adjacent mine works and exited through three mine portals before entering Coldwater Fork, which flows into Rockcastle Creek and the Big Andy Branch of Wolf Creek. The gully shown in this aerial photo was created when slurry came out of the mine portal on the Wolf Creek side of the mine works.

(Right) Damon White of the Cabinet's Environmental Response Team (ERT) was the first Cabinet representative to arrive on the scene. Later, 24 ERT personnel worked at the scene, along with 60 other members of the Department for Environmental Protection and 30 members of the Department for Surface Mining Reclamation and Enforcement.





(Top left) This 72-acre impoundment near Inez, Ky., was the source of the slurry spill. Slurry is created when coal is washed before it is transported to buyers such as power plants.

(Top right) This is one of the sediment basins constructed to hold slurry pumped or vacuumed from the waterways. These holding cells allow the solids in the slurry to settle. As of early December, crews had removed 306,000 cubic yards of solid material and 6.1 million gallons of liquids from Wolf Creek and Coldwater Fork.

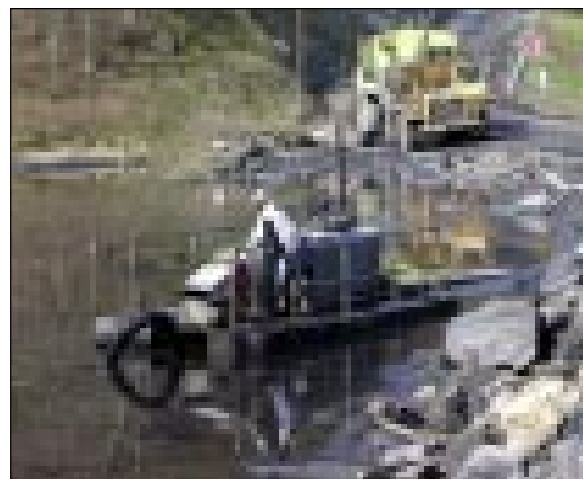
(Left) The spill impacted about 90 miles of waterways, including 60 miles along the Kentucky/West Virginia border. The Kentucky National Guard hauled in water for residents whose water districts had to shut down because of the spill. Some water districts had to install temporary intakes in unaffected waterways before they could resume operations.



Information compiled by Heather Frederick

Photographs provided by Kevin Howard, J. Hamon, Damon White, Mark York and the U.S. Coast Guard

(Left) Trackhoes, bulldozers and dump trucks were among the equipment used to remove the slurry from affected waterways. Other equipment used included dredges and vacuum trucks. In November, more than 500 workers hired by Martin County were working on the cleanup.



(Above) Pumps on barges were one method used to remove slurry from the affected waterways. A consultant hired by the Natural Resources and Environmental Protection Cabinet estimated that the initial removal of slurry from drainage basins in Wolf Creek and Coldwater Fork could be completed by March or April 2001 under favorable weather conditions.

(Right) This is one of the portals the slurry exited from in the Coldwater Fork area. The opening is being supported by wooden blocks.



The FFA is a national youth organization of 453,902 student members preparing for leadership and careers in the science, business and technology of agriculture. The organization has 7,220 local chapters spread across all 50 states, Puerto Rico and the Virgin Islands. The FFA strives to make a positive difference in the lives of students by developing their potential for leadership, personal growth and career success through agricultural education. Visit www.ffa.org for more information.

Students applied classroom knowledge to real-life situations during the National FFA Convention, held in Louisville this fall. Almost 50,000 students, teachers and guests assembled in what is the largest annual youth gathering in the United States. Some of those students used their academic skills to compete for national honors.

This year's 73rd annual convention was held in conjunction with the National FFA Environmental/Natural Resources Career Development Event (CDE). The CDE is an educational competition that tests students' problem-solving and decision-making skills in environmental and natural resource areas. These areas include soil profiles, water and air quality, waste management, environmental analysis, Global Positioning Systems and ecological succession. Each team

competed at local and state levels for the privilege of representing their home state at the National FFA Convention.

The team from Yanceyville, NC., took first place in the event with Oregon, Connecticut, Indiana and Tennessee rounding out the top five. Caldwell County High School represented Kentucky and placed 24th overall. Team members were Emilee Martin, Laron McConnell, Trevor Baker and Erinn Martin.

The Kentucky Division of Conservation assisted with the event, which was held at the Kentucky Fair and Exposition Center. The sponsors of the event included Publisher's Press of Lebanon Junction, Ky., Michelin Ag Tires of Greenville, S.C., Mississippi Chemical Corporation of Yazoo City, Miss., and the National FFA Foundation of Indianapolis, Ind.

National competition puts students to the test in Kentucky

Story and photographs by Martin Bess
Division of Conservation



A group of students above test the soil profile, while at right a different group tests for water quality. These tests were conducted at the Publishers Press Plant and Wildlife Refuge in Bullitt County near Lebanon Junction.



Agencies involved with the National FFA Environmental/Natural Resources Conservation Development Event were Kentucky Association of Conservation Districts; Kentucky Farm Bureau Federation; Bullitt, Woodford, Franklin, Monroe and Spencer county conservation districts; USDA/Natural Resources Conservation Service; USDA/Farm Service Agency; Cooperative Extension Service; Kentucky Department for Natural Resources; Division of Water; and Department for Fish and Wildlife Resources.

License plates help purchase 10,000 acres

By Mary Jean Eddins
Department for Natural Resources

Drivers with Kentucky nature license plates have helped purchase and preserve more than 10,000 acres of natural areas, wildlife habitat and recreational areas across the Commonwealth of Kentucky. The money generated through the sale of the nature plates goes into the Kentucky Heritage Land Conservation Fund for the purchase, protection and management of natural areas, wildlife habitat and other sites that are valuable for their natural conditions. Environmental fines and the state portion of the unmined minerals tax are also added to the fund, which provides grants for land acquisitions by state agencies, county and local governments, and state colleges and universities.

The fund recently reached an important point in its history by providing protection for its 10,000th acre. Dr. William H. Martin, chair of the Kentucky Heritage Land Conservation Fund Board, the entity that awards this funding, says the program has greatly exceeded his expectations in the five years since the first grant was awarded. "The board is proud to have reached this milestone of protecting 10,000 acres in such a short time," Martin said. "The Kentucky Legislature had the foresight to pass legislation that allowed this to happen. Their support and the support of individuals who have purchased the nature license plate have led to this success."

Three nature license plates featuring the Kentucky warbler, the cardinal and the bobcat are available at county clerks' offices. These plates cost an additional \$10 over the normal \$15 registration fee. The extra cost is tax deductible.

The fund's recent

acquisitions include the 811-acre Booth tract in Fleming County. The Kentucky Department of Fish and Wildlife Resources acquired this tract, and it will be managed as part of the Clay Wildlife Management Area. This acquisition complements the department's habitat restoration and protection efforts along Fleming Creek in the Licking River drainage system.

Another recent acquisition was the 200-acre Pearman property in Larue County, to be known as the Larue County Environmental Education Center. This purchase was quite an accomplishment by Larue County Judge-Executive Tommy Turner and the Larue County Fiscal Court. It required successful negotiations with the 14 Pearman children and their spouses, heirs of Robert and Annabelle Pearman. The Pearman tract includes approximately 100 acres of woodland, with many trees over 150 years old.

Another notable success story is the purchase of several properties by the Jefferson County Fiscal Court. Two of these purchases have been additions to the



(Above) Jefferson County Judge-Executive Rebecca Jackson and members of the Kentucky Heritage Land Conservation Fund Board at the grand opening of the Rayhill tract.

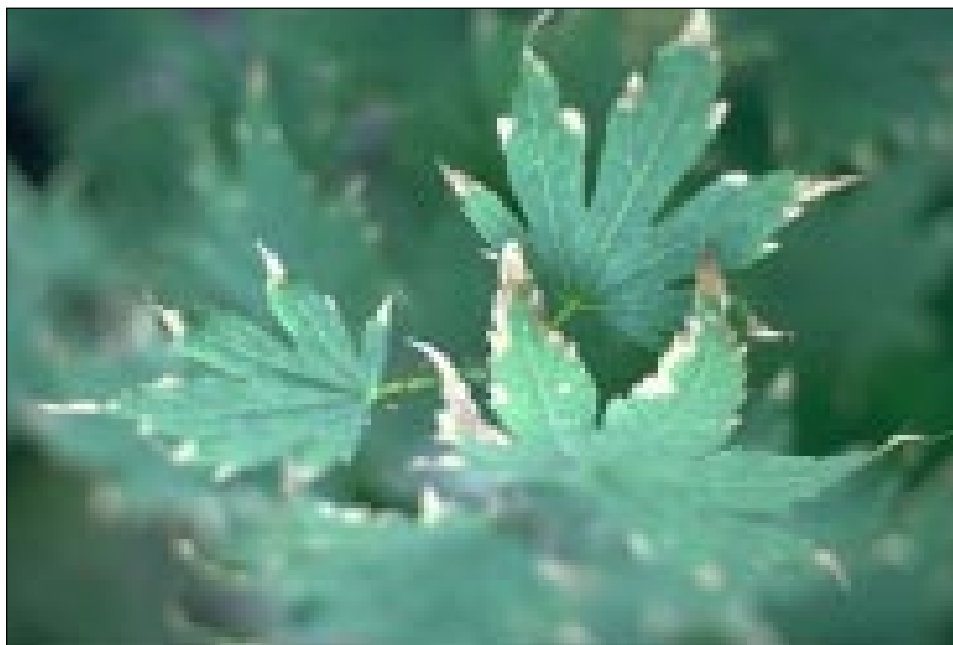
Photos by Brian Keller



Three nature license plates featuring a bobcat (top), cardinal (center) and Kentucky warbler (bottom) are available at county clerks' offices for \$10. Purchasing these plates help the Kentucky Heritage Land Conservation Fund purchase, protect and manage natural areas.

Jefferson County Memorial Forest. The purchases, funded with Heritage Land monies, have made the Memorial Forest the largest publicly held urban forest in the United States. At the grand opening of one of the additions, known as the Rayhill tract, Jefferson County Judge-Executive Rebecca Jackson and Dr. Martin both spoke about the benefits of preserving such areas. According to Martin, "Kentucky loses over 160 acres of forests and fields to development every day. It is extremely important that we identify and protect critical areas such as this."

If you would like more information about the Kentucky Heritage Land Conservation Fund, please e-mail Mary Jean Eddins at mary.eddins@mail.state.ky.us or call her at (502) 564-2184. If you would like to purchase a nature license plate, please contact your county clerk.



The brown tips on these leaves are a sure sign of leaf scorch. The tips are brown and break easily.

the roots can accumulate to toxic levels. In addition, salt can cause secondary effects such as making trees more susceptible to disease. One of these is Verticillium wilt, which interferes with absorption of essential minerals and reduces cold hardiness.

In future years, trees can begin to develop symptoms of leaf scorch, premature fall color, defoliation and even death. Salt may be considered the culprit of such problems. Reactions to salt will vary depending on species and whether the roots or foliage are exposed.

Differences in salt tolerances have been observed, and trees may generally be classified as shown in the box below.

Winter salting spells trouble for Kentucky trees

By Diana Olszowy
Division of Forestry

While salt is helpful to us during the winter season, it can bring harm to our landscape the remainder of the year.



Witches'-broom, a disease often caused by salt damage, appears as an abnormal, brushlike cluster of dwarfed, weak shoots on this eastern red cedar. Division of Forestry photo

On your morning drive to work this winter, you hope the salt trucks have hit the road ahead of you. While their work is vital to our safety, it can also take a serious toll on the state's trees. The high salt concentrations produced by the deicing of Kentucky's roads, parking lots and sidewalks can injure trees in several ways.

Snow that is pushed into piles in parking lots is often mixed with large amounts of salt. These snow piles are shoved onto or near landscape strips containing trees and shrubs. High-speed interstates and roadways generate constant salt spray onto trees, and the salt applied to sidewalks can readily flow with melting snow to nearby trees.

As salt seeps into the soil, the amount of water that soil particles can hold decreases. Trees then suffer from drought because water is unavailable to their root systems. Salt and other ions absorbed by

Very Tolerant: Bur oak, callery pear, golden raintree, red cedar, red oak, Siberian elm, white oak and willow oak.

Tolerant: Austrian pine, bald cypress, black cherry, black locust, black walnut, green ash, honey locust, Scots pine and white ash.

Moderately Tolerant: American elm, holly, linden, hackberry, hawthorn, Norway spruce, red maple, hickory, sweetgum, sycamore and yellow poplar.

Intolerant: Beech, birch, crabapple, gingko, hemlock, mulberry, sugar maple and white pine.

Camera lets scientists peer inside wells



**By Pam Carew and Christine Brand
Department for Surface Mining
Reclamation and Enforcement**

Much as a doctor or nurse takes blood samples to determine the health of an individual, groundwater sampling can reveal a great deal about the general health of a watershed. Laboratory results from well water samples can provide proof of mining impact or can demonstrate that other environmental impacts are causing a change in the groundwater supply. However, when there is no water in a well, other tools are needed to investigate problems with the well.

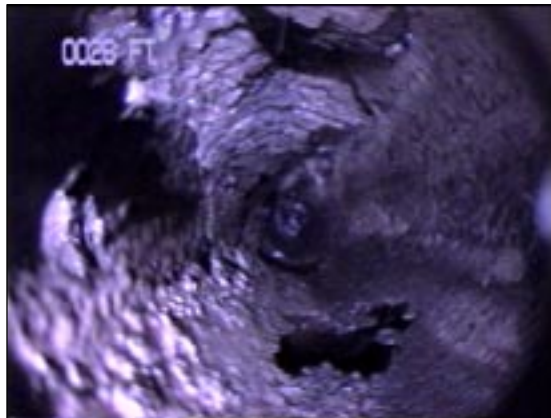
Hydrogeologists for the Department for Surface Mining Reclamation and Enforcement (DSMRE) are using video cameras to verify if mining has impacted groundwater supplies. Kentucky coal mining regulations require operators to replace domestic water supplies damaged by surface or underground mining operations. In order to determine if a coal mine has impacted a water supply, an investigation is conducted.

DSMRE hydrogeologists use a

Hydrogeologists are able to use the images shown on the camera's monitor to explain to well owners what is being observed in their wells. Photos provided by Billy Ratliff. Ratliff is the sole operator of the down-hole camera.

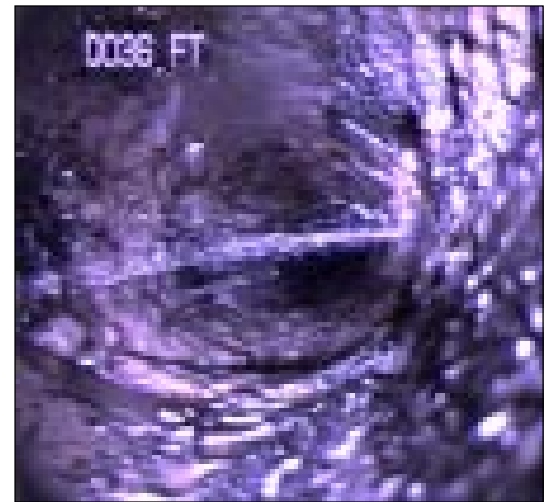
down-hole video camera to view the inside of groundwater wells. This specialized, waterproof camera is designed to create a running color video as it is lowered into a well. Having the ability to make a visual log of the inside of the well bore is invaluable to document the condition and construction of the well. For example, the camera can show the depth of the well and how far below the surface its protective casing extends.

During a groundwater investigation, it is important for a scientist to know how and where water enters the well. The down-hole camera can help scientists determine this information.



Sulfate-reducing bacteria are frequent natural constituents in the microbiology of groundwater supplies. These bacteria cause hydrogen sulfide gas to be released as a by-product when the sulfate is reduced. Hydrogen sulfide in this well has caused the iron casing to rust away exposing the well bore.

The camera shows the corroded well casing around the edges of the picture with water reservoir in the center of the picture.



Water entering a well due to fracture flow.

The image from the camera, including a depth figure, can be seen in real time on a monitor. The operator can pause at any point in the well to take a closer look, and several lighting attachments can help scientists get a better look at the inside of the well.

Direct visual observations can tell the hydrogeologists a lot about the chemistry of water in the well. For instance, red staining on the well wall may indicate the water supply has iron in it, which can stain appliances and fixtures in the residence using the well. Visual clues prompt the investigator to look for specific details in the well water chemistry.

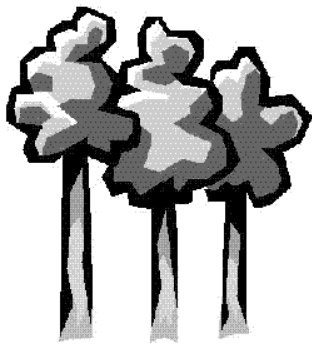
A common cause of many water quality complaints is the presence of bacteria, many of which form a slime coating. Slime-forming bacteria, although unappealing, are not harmful to humans or animals if digested. Their presence, however, can cause tremendous quality and quantity problems in a well. Bacteria can also lead to rust damage in the well.

The video camera shows and documents many things that can physically go wrong with a well. Wells can collapse, and in some cases, the well bore can be offset. These situations make it difficult to remove any pumps or plumbing and can impair the amount and quality of water available to the well.

In the next issue, we will discuss how the camera is used to help scientists and engineers determine if subsidence of the ground has occurred due to underground mining activities.

Big gifts highlight effort to protect natural treasure

By Don Dott, Director
Kentucky State Nature Preserves Commission



its \$3.5 million goal.

Blanton Forest is an old-growth forest located in eastern Kentucky. The Kentucky Natural Lands Trust (KNLT), a nonprofit organization dedicated to fundraising for Blanton Forest, has an option to purchase the approximately 1,200 acres of old-growth forest that are not already owned by the Kentucky State Nature Preserves Commission. The next parcel of land in

After a recent fall hike into Blanton Forest, two young girls gave their grandmother such a vivid description of the forest that she was inspired to donate \$500,000 to the fundraising campaign to protect it! Another committed supporter recently wrote a check for \$100,000! These gifts pushed the fundraising effort to more than 70 percent of

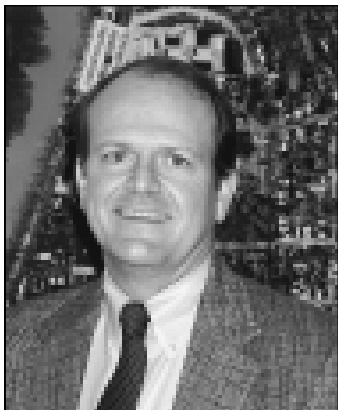
the hierarchy for acquisition is an adjoining area of high-quality forest containing about 750 acres, for which KNLT also has an option. Once KNLT is able to purchase the two optioned tracts, they will be transferred to the Kentucky State Nature Preserves Commission to be dedicated as state nature preserves and protected in perpetuity. The area would eventually be used for research and opened to public visitation.

You can get more details on the forest and view some impressive photos on the Internet at www.blantonforest.org.

Your help is needed to preserve this natural asset. While most folks can't make a gift as generous as those mentioned earlier, every donation puts KNLT one step closer to its goal in the largest natural area preservation project ever undertaken in Kentucky. All donations are tax deductible. Contributions can be sent to the Kentucky State Nature Preserves Commission, 801 Schenkel Lane, Frankfort, KY 40601, or Blanton Forest Campaign, c/o Kentucky Natural Lands Trust, 433 Chestnut Street, Berea, KY 40403.

Two new division directors join NREPC

Division of Energy



John Davies began serving as the director of the Kentucky Division of Energy on Sept. 18, 2000. He replaced John Stapleton, who retired from the division after 42 years in state government.

Davies served as an area manager for Ferrellgas, overseeing retail propane supply and service to residential and industrial customers in eastern Kentucky, West Virginia and eastern Tennessee before joining state government in September.

Davies stepped into his new job during a time of increased focus on energy issues. "Higher energy costs have renewed public interest in energy conservation and energy efficiency," Davies said. "This presents us with a great opportunity to help the Commonwealth become more energy efficient while promoting the environment and state economy; it's an exciting and dynamic time to join Kentucky's energy team."

Davies' career also includes 20 years in the U.S. Army, from which he retired as a lieutenant colonel in 1996. Davies served as an energy office systems manager and manager of energy conservation programs in the Pentagon.

Davies, his wife Lisa and their two children live in Lexington.

Department for Surface Mining



Larry Adams is the new director of the Division of Permits in the Department for Surface Mining Reclamation and Enforcement. He began work on Sept. 18, 2000.

Adams received his bachelor's degree in Mining Engineering from Pennsylvania State University in 1985 and is a licensed professional engineer in the Commonwealth of Kentucky. He has worked extensively with the mining industry for approximately 15 years, working as vice president/engineering manager for Mining Consulting Services Inc. and as officer/co-owner of Mining Internet Services Inc.

"I came to know many of the division personnel through my work as a consultant," Adams said. "I look forward to working more closely with them in my new capacity. I envision the Division of Permits as seeking to strike a balance between the needs of industry and protection of the environment."

Adams has served as a director and past chairman of the Professional Engineers in Mining Practice Section of the Kentucky Society of Professional Engineers.

He and his wife, Debbie, and their two children live in Lexington.

Web Watch



EQC database showcases local efforts to protect the environment

By Leslie Cole
Environmental Quality Commission

A new addition to the Environmental Quality Commission's (EQC) Web site showcases the efforts of dozens of communities to protect Kentucky's environment. EQC conducted a survey last year of county and city officials to gauge their environmental activities. After compiling its findings, EQC put them on the Internet in hopes that communities can share ideas and learn from each other.

The Best of Kentucky: A Database of Local Actions to Protect the Environment showcases the efforts of 41 community programs. It can be accessed by visiting the EQC Web site www.kyeqc.net and clicking on *Best of Kentucky* in the menu.

EQC found that a number of communities have developed successful initiatives aimed at tackling some of our toughest environmental problems. They range from simple roadside litter cleanups to more complex campaigns like "It All Adds Up to Clean Air," an outreach program designed to educate people about air quality.

Many of these programs grew around a specific local problem or concern. For example, Fleming Creek was so polluted it could no longer be used as a water supply source for livestock. The community created the Fleming Creek Watershed Project to work with farmers to implement best management practices to improve

water quality.

The Bowling Green/Warren County Greenbelt Commission was driven by the desire of local leaders and citizens to preserve the unique setting of their community. The group hopes to have an extensive greenbelt system of trails linking the community together.

The *Best of Kentucky* is an ongoing database. Communities are encouraged to submit programs in the areas of water, waste, land use, forestry, energy conservation and protection of natural areas. To submit a program, contact EQC at (502)564-2150. Programs can also be submitted electronically at the *Best of Kentucky* Web site.

Air Quality small business news

By Rose Marie Wilmoth
Air Quality Small Business Rep.

Would you like information about free services available to assist small businesses in complying with air quality regulations?

Are you interested in learning about the 2001 Air Quality Stewardship Awards and how you can nominate a business for consideration?

The Air Quality Small Business Web site is being updated to provide easier access to this information. Success stories and photos of small businesses that have been assisted by the Kentucky Business Environmental Assistance Program (KBEAP) are also available as well as descriptions of the Air Quality Stewardship Award winners.

Several new links to state and federal organizations that provide small business information have also been added.

The updated site may be accessed at <http://www.kyenvironment.org/nrepc/dep/smbizair/index.htm> or on the Division for Air Quality home page at <http://www.kyenvironment.org/nrepc/dep/daq/daqhome.html>. Click on the "Air Quality Representative for Small Business" link.

The world of waste

By Matt Hackathorn
Division of Waste Management

Who should you call if you're concerned about a potentially hazardous waste in your area? How can local governments get help establishing a recycling program? The Kentucky Division of Waste Management offers assistance on these and many other solid waste issues.

The division has eight branches and the director's office. You can learn more about what each of these branches does by visiting the division's organizational chart at www.kyenvironment.org/nrepc/dep/waste/org/dwmchart.htm on the World Wide Web.

This interactive cyber chart provides a snapshot of each branch's mission and responsibilities, along with the names, e-mail addresses and responsibilities of managers and supervisors. Links to each branch home page allow you to obtain in-depth information about what each branch does.

Turn your environmental interest into a career

If you want to help protect Kentucky's land, air and water resources, and you're looking for a professional change, check out the job openings in the Kentucky Natural Resources and Environmental Protection Cabinet.

The Cabinet needs geologists, foresters, engineers and many other professionals to help carry out its mission.

To learn more about the Cabinet's current openings and how to apply for a position, go to <http://www.kyenvironment.org/nrepc/jobs/recruiting.htm> on the World Wide Web.

This Internet page includes a list of jobs the Cabinet has a critical need to fill and lists benefits available to state employees.

2000 Governor's Conference

Conference celebrates 25th year

For the last quarter century, the Natural Resources and Environmental Protection Cabinet (NREPC) has hosted the Governor's Conference on the Environment, bringing Kentuckians together to discuss and learn about

environmental issues facing the Commonwealth.

This year, issues focused on emerging air quality issues, the pending energy crisis, water and sewer services for all Kentuckians and managing our waste.

Gov. Paul Patton reviewed a number of other topics at the conference including Black Mountain, the 1998 forest initiative, water resources act, solid waste and smart growth, and he commended the Cabinet's efforts toward putting a stop to illegal dumping.

The topic of the keynote speaker was "smart growth." Thomas Hylton, Pulitzer Prize-winning author of *Save Our Land, Save Our Towns*, was the keynote speaker. He talked about land use and the pressures urban sprawl is

placing on many Kentucky communities, and he showed examples of towns and communities across the country that are "growing smart."

His slide show and talk is available at <http://www.dep.state.pa.us/see&hear/interactive/thomashylton.htm>.



Thomas Hylton



Cabinet Outstanding Employees recognized

Each year, NREPC employees nominate colleagues who go "above and beyond" in contributing to the Cabinet's mission at protecting Kentucky's natural resources. The 1999 Outstanding Employees are pictured at left.

(Top left) **Department for Surface Mining Reclamation and Enforcement Outstanding Employees** Steve Vance, Neal Bruckner Jr., Eddie Campbell, Jackie Slone, Barbara Reynolds and Allen Luttrell, deputy commissioner.

(Top right) **Office of Legal Services Outstanding Employee** Randy McDowell.

(Middle left) **Department for Environmental Protection Outstanding Employees** James Shivel, Massoud Shoa, Stuart Ecton, John Brumley, Ken Cooke, Commissioner Bob Logan and Patricia Long.

(Middle right) **Kentucky State Nature Preserves Commission Outstanding Employee** Marc Evans.

(Lower left) Secretary Bickford presents award to **Secretary's Office Outstanding Employee** Cindy Schafer, *Land, Air & Water* editor.

(Lower right) **Department for Natural Resources Outstanding Employees** Connie Gray and Dwayne Whitlock.



on the Environment

Environmental Excellence Awards presented



Each year, deserving businesses, organizations and individuals are recognized for going “above and beyond” in their dedication to the stewardship of the Commonwealth.

Examples of these activities range from environmental education programs to innovative pollution prevention technology . . . from recycling programs to use of best management practices . . . from

toxic waste reduction programs and litter cleanups to environmental sound site plans.

These Kentucky citizens have demonstrated their commitment to a better and sustainable future for Kentucky’s present and future citizens and are the recipients of this year’s Environmental Excellence Awards:

Forestry

Father Paschal Phillips

Soil Conservation

Todd County Conservation District

Energy Conservation

Robin Thacker

Heritage Land Conservation

William Wigglesworth

Mining Reclamation — Western Kentucky

Warrior Coal Mining Company

Mining Reclamation — Eastern Kentucky

McCoy Elkhorn Coal Corporation

Leadership in Pollution Prevention

Cardinal Kitchens Inc.

Johnson Controls Inc.

Community Environmental Leadership

Lee County Fiscal Court

Environmental Education

Versailles Montessori School

Industrial Environmental Leadership

R. R. Donnelley & Sons Co.



Gov. Paul Patton and Secretary James Bickford

Two special **Secretary’s Awards** were given this year. The 7th-grade class at Wallins Elementary School in Harlan County conducted a grass-roots—and successful!—campaign to save Black Mountain. (Lower right) Sec. Bickford presented the award to Wallins teacher Judy Hensley. (Right) Brandon Campbell received an award for his work on the “Bottle Bill,” while a student at Estill County High.

**Governor’s
Conference on
the Environment
photographs
provided by
Creative Services.**



Awards



EPA recognizes Cabinet's efforts to clean up Kentucky

By Heather Frederick
Public Information and Education Branch

violation to illegal dumpers. Those individuals have cleaned up 854 dumps, removing more than 3,100 tons of trash in the process.

The Cabinet is also a partner in the PRIDE program. PRIDE is a joint effort between U.S. Rep. Hal Rogers, the Cabinet, federal and local agencies and volunteers. The program covers 40 southeast Kentucky counties and provides grants for local cleanup activities, recycling efforts and environmental education. PRIDE also finances loans for septic systems to end straight pipe sewage discharges.

Commonwealth Cleanup Week, held annually during the fourth week in March, is a Cabinet effort to "spring clean" Kentucky. This year, more than

16,000 volunteers across the state removed trash from roadsides, illegal dumps and waterways.

The Cabinet's cleanup efforts were among more than 250 nominations for the inaugural Environmental Merit Awards. "Those honored today have gone above and beyond the call of duty to address public health and natural resource protection issues of concern and, in so doing, have made this region a better place for all of us," said John H. Hankinson, Jr., EPA Regional Administrator in Atlanta.

(Above left) Secretary James Bickford accepts the Cabinet's Environmental Merit Award from John Hankinson Jr., regional administrator, EPA Region IV. Photo by Heather Frederick

The Cabinet's efforts to eliminate illegal dumps and clean up the Commonwealth earned it an Environmental Merit Award from the U.S. Environmental Protection Agency. The Cabinet received one of five awards presented to Kentuckians at a ceremony in Atlanta.

"I am pleased that the EPA has recognized our hard work on the Clean Up Kentucky program," said James E. Bickford, secretary of the Natural Resources and Environmental Protection Cabinet. "We have made great strides in eliminating illegal dumps, roadside garbage and straight pipe sewage discharges, but much work remains to be done to clean up the Commonwealth. I look forward to the passage of solid waste legislation in the next session of the General Assembly that will help us cut down on roadside litter and illegal dumping, and increase the amount of recycling in our state."

The Cabinet's Clean Up Kentucky program consists of its Illegal Dump Initiative, Commonwealth Cleanup Week and its work with the PRIDE (Personal Responsibility in a Desirable Environment) program.

The Cabinet has used field inspectors and hidden surveillance cameras to catch illegal dumpers. Since 1996, the Cabinet has investigated 3,400 illegal dumps and issued more than 2,700 notices of

Other Kentucky winners are:

➤ **Cam Metcalf, executive director of the Kentucky Pollution Prevention Center in Louisville.** Metcalf was recognized as a pioneer in the implementation of Supplemental Environmental Projects (SEPs) and Environmental Management Systems (EMS). SEPs are environmental projects companies perform as restitution for violating environmental laws or regulations. EMS are plans businesses use to achieve continual improvements in their environmental performance.

➤ **Jennifer Thompson, program manager at the Kentucky Natural Resources Leadership Institute in Lexington.** The EPA recognized her for teaching students to resolve conflicts over environmental issues and to effectively communicate with policymakers. She also encourages them to take active roles in environmental issues.

➤ **Lafarge Gypsum in Silver Grove, Ky.** This company received an award for its state-of-the-art drywall production facility. The facility uses recycled materials for all of its primary raw material requirements. The plant also has plans to recycle all waste wallboard and process water.

➤ **Friends of McConnell Springs in Lexington.** This nonprofit group cleaned up McConnell Springs, a site on the National Register of Historic Places. The site used to be an illegal dump. The group also brought together the public, community groups and businesses to fund and build an educational resource center at McConnell Springs.

Department for Surface Mining wins national award

By Heather Frederick
Public Information and Education Branch

The Kentucky Department for Surface Mining Reclamation and Enforcement (DSMRE) has received national recognition for its work at the former Pleasant View mine site in Hopkins County. The department received the 2000 National Abandoned Mine Land Reclamation Award from the federal Office of Surface Mining Reclamation and Enforcement (OSM).

"The Pleasant View mine project is an example of what can happen when government and the private sector work together to accomplish good things for the citizens of our Commonwealth," said Carl Campbell, DSMRE commissioner. "Through the determination and hard work of the personnel at the Division of Abandoned Mine Lands, and the expertise and dedication to a job well done by the contractor, Rust of Kentucky, an environmental eyesore and potentially hazardous site has turned back into a beautiful and productive area. The citizens of Madisonville and Hopkins County can and will use it as a recreational site for many years to come."

The 250-acre strip mining site marked the largest reclamation project ever conducted by the Commonwealth. The reclaimed area used to be called "Ketchup Lake" because of a 30-acre, red, acidic impoundment on the property. Runoff from the impoundment devastated aquatic life in nearby Greasy Creek. The site was also used as a waste area for refuse from nearby underground mines.

Rust of Kentucky treated and released the water in "Ketchup Lake," moved acid spoil on the site, covered the site with soil and re-established vegetation on the property. Rust completed the reclamation in November 1999. Since then, signs of aquatic life have returned to Greasy Creek, and the former mining site yielded enough vegetation for a hay harvest. The site's owner, Consol Coal Company, donated it to the city of Madisonville last fall.

Each year, the U.S. Interior Department's OSM sponsors a competition to honor the best examples of abandoned mine land reclamation in the country. Judges from each OSM field office and the State and Tribal AML Office gave their highest scores to the Kentucky project.



"I commend our national winners for the good work they've done in reclaiming our precious landscapes," said Interior Secretary Bruce Babbitt. "Their efforts and dedication to restoring the land demonstrate that we don't have to sacrifice a strong economy for a clean, healthy environment."

Grass now covers this former abandoned mine site, giving no hint of the acid spoil that used to cover this area. Photo by J. Hamon

10 receive awards for recycling efforts



Matt Hackathorn
Division of Waste Management

Ten organizations received awards for their outstanding recycling programs during America Recycles Day in November. The Kentucky Natural Resources and Environmental Protection Cabinet presented the "Who's Who of Recycling" award to manufacturers, nonprofit groups, universities and other organizations.

America Recycles Day is an event designed to encourage the public to recycle and to buy recycled products.

Solid waste coordinators from across the state nominated organizations with strong recycling programs in their areas. Nominees were judged based on the number of different items recycled, the volume recycled and the organization's commitment to "closing the recycling loop," meaning purchasing items with recycled content. And the winners were....

Food City
General Motors Corvette Assembly Plant
Kroger Corporation
L'Oreal USA Products
Mallinckrodt Baker Inc.
Morehead State University
Murray State University
Pepsi-Cola Bottling Company of Corbin
University of Louisville
Western Kentucky University

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